Trusted Draw 360™ Summary

Trusted Draw 360™ is a modern, secure and cost effective draw proposition for any lottery or a game provider seeking a draw machine for a new game or planning to replace existing draw machines. Trusted Draw will support all current client lottery games and draw needs within a single system platform and be easily adapted to game changes or new games in the future, including add-on, instant win or promotional games. Trusted Draw uses a patented RNG method of generation of auditable random numbers with built in fraud detection. The RNG has been certified by multiple independent labs. Trusted Draw system has been used successfully by lotteries since 2005 in the US and internationally.

Operating modes. TD 360 has flexible configuration, adaptable to clients' needs. System can be deployed on-line, connected to gaming system, on a local secure network, and off-line.

Trusted Draw provides draw results in a format compatible with graphic animation programs and enables display of draw results in real time.

Two GUI interfaces are provided: a Draw GUI to perform draws, and Admin GUI to perform admin functions, such as maintenance of users and systems.

Automation. An important feature of Trusted Draw is automation. It allows reducing to minimum complexity and human involvement, with associated with it inherent risks of error and fraud. In the off-line and remote mode TD 360 supports auto scheduling: multiple draws are initiated with a Single Click™; also Single Click allows for multiple file imports, exports, and printing; there is no room for error as all game parameters are predefined and then certified. In the online mode draws are fully automated, with no human participation during the draw.

System maintenance functions are also automated. Administrator can choose between manual purging of old data and automated purging, in which case Trusted Draw system will automatically purge old reports, archived files and Activity Log entries based on the configured criteria.

Security – Secure Computing Environment. Trusted Draw introduces high level of draw security, which ensures draw integrity – essential factor for all lotteries as the integrity of game provider is a critical element for the public and essential for successful games. In addition to standard preventive security measures, such as dual log-in, hardened BIOS and OS, firewalls and protected console logs, SZREK introduced protective software environment: TD 360 runs in the system protected area - no user has a write/modify/delete privileges within this area, so all data, logs, executables and reports are protected. TD 360 also provides a secure logging of all user activity that can be reviewed any time, for both draw and administrative activity.

For remote draw mode TD 360 introduces another level of protection – Draw GUI and Admin GUI users can only view the TD 360 environment and do not have access to the operating system environment. Consequently, no malicious program can be executed on the draw system, no forged device can be connected to the draw system and no fraudulent data or program can be uploaded to the draw system.

Security – Tamper Proof Draw. TD 360 has fraud detection designed into the system: with every draw it produces a tamper proof draw log which enables detection of all draw fraud. This includes hard to discover insider fraud, which in other computerized draw systems can go undetected. Trusted Draw uses secure tamper evident hardware for random number generation. NIST certified LYNKS II

hardware security modules (HSMs) from SPYRUS are used to generate digital signatures from which random numbers are derived according to SZREK RNG patented generation method.

Draw Time Protection. A tamper evident HSM safeguards its own, unmodifiable clock. This clock allows for verification of changes of the system clock and is used to protect against draw time fraud.

Myths around Draw Security. Some people believe – incorrectly – that a connected draw system is less secure than a standalone system. However, for a drawing system in a closed environment, where an attack comes from the inside, connectivity is not the main security concern. The only way to protect the draw system is to eliminate the incentive to defraud it. This may be achieved if any and every draw fraud is detected. If a potential attacker knows that any fraud will be detected, there will be nothing for them to gain from defrauding the system. TD 360 provides such fraud detection technology which works in all drawing system configurations, connected and standalone. Modern technology enables safe connectivity. US Lotteries have connected, online terminals since 1976. The whole world is connected! The fact that the RNG system has to be a standalone, offline system in order to be secure, is a myth. Actually, the most known case of defrauding the lottery draw was with a MUSL standalone, offline drawing system. As the fraud itself may not be visible on the draw system, other measures are needed to allow for independent fraud detection. The MUSL electronic draw system was lacking such technology.

We believe that a secure electronic draw system needs to be protected in both connected and standalone modes. The TD 360 Secure Computing Environment is designed to provide such protection in both operating modes. Moreover, the main security exposure is direct system access by skilled insiders. Direct access opens new vulnerabilities that are not available to a remote user, as the system is potentially exposed when a user logs in and executes any program or command or when a user connects an external device.

While upfront protection is very important, it may not be sufficient against a determined skilled insider. For this reason, we believe that security measures cannot be restricted to isolating the draw system, restricting access to it, and implementing various protective measures, but that fraud detection is critical.

Separation of Duties. Multiple user roles are supported to separate administrative functions from draw performance and draw auditing; minimum two users, i.e. Draw Manager and Draw Auditor, are required to conduct a draw. TD 360 can be configured to require three users to conduct a draw: Draw Manager, Draw Auditor, and Observer.

Logging. TD 360 provides very comprehensive logging services. Four types of logs are offered:
1) The Activity Log - every TD 360 draw, maintenance and Admin function is logged to the Activity Log. The Activity Log can be viewed on the TD 360 GUI. It is provided externally as a .txt or .pdf file or as a .csv file to be loaded into a database or viewed in MS Excel.
2) The Certification Log - all generated random numbers are logged to “product / game” files in certification-ready format, which can be then used for recertification of randomness (from actual data generated in production).
3) The Signature Log – a tamper-proof log generated as part of the RNG process - allows to prove the integrity of random numbers generation, any time.
4) The Console Log - each system service creates a console log that can be imported for analysis.

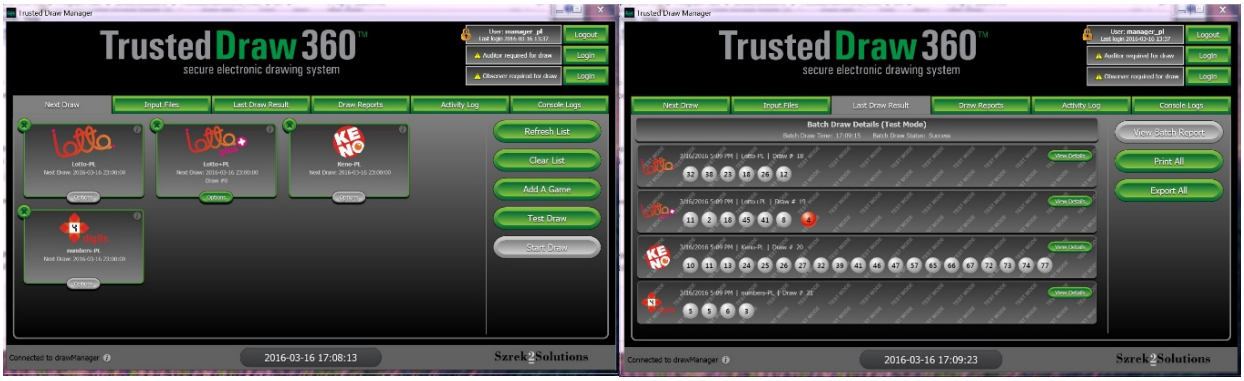
Reports. Full information from each draw is captured in a draw report, which includes winning number information and security data. Draw reports are very flexible: they can be automatically printed,

exported as .txt or .pdf files, or in .csv format for DB load. Many reporting features are supported to offer lotteries personalized reports.

Supported Games. Trusted Draw was certified for many game types: any matrix game such as regular lotto, bingo, keno; numbers, with any number of digits, is supported, with or without repetition; table based games, where the probability of winning is defined by a distribution table, with and without pool depletion; raffle games, with standard raffle, where N numbers are drawn from a range, and enhanced raffle with support for cancelled tickets, weighted odds for different raffle entries, with file input used for 2nd chance draws**.** All raffle numbers can be drawn with or without replacement, with support for multiple divisions, sorted and unsorted, game rules provided manually from a GUI or a file.

Certifications. Multiple SZREK RNG certifications were performed by GLI (Gaming Labs International), TST Labs (a GLI subsidiary), Eclipse Testing, FORCE Technology, in Denmark, La Sapienza University of Rome, Italy, Milano University, Italy, Technical University of Denmark, Denmark, and Delehanty Consulting. SZREK technology for fraud detection was certified by Vigil Security and SeNet.

Trusted Draw 360 screen samples:



Audit System. Trusted Audit is an audit system designed to detect any and all types of RNG fraud. While traditional audits verify syntax of logged data, Trusted Draw technology verifies data semantics – Trusted Audit verifies that the actual draw numbers were correct. Traditional draw audit relies on draw logs which could be altered if the draw system was compromised. Draw logs created by the Trusted Draw system cannot be modified or created fraudulently without detection. In addition, they are verified by independent Trusted Audit systems that allow for proof of draw integrity, even if the draw system is compromised.

Trusted Audit provides verification of four critical draw factors: (1) that the numbers presented at the draw were the correct numbers generated by the system, (2) that the draw results were generated at the time indicated, (3) that the numbers were generated from the correct number range and (4) that the specific hardware was used for draw generation. This verification can be done any time – immediately after the draw or for any past draws.

Additionally, in online and remote mode Trusted Draw offers integration with an ICS system: Trusted Audit can provide critical draw data to the lottery ICS system in real time for verification, to prove draw integrity.